



Artur SOGOMONYAN

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PROFESSIONAL SUMMARY

Visionary AI Engineer and CTO with expertise in building end-to-end intelligent systems that bridge physical and digital worlds. Specialized in deploying production-ready AI solutions across sustainable technology, autonomous transportation, and decentralized systems. Proven track record of translating complex business problems into scalable technical architectures using cutting-edge Machine Learning, Computer Vision, and LLMs.

EDUCATION

Data Science — *Master of Science* 2022 – 2025
Technische Universität Wien, Austria

Information technologies and telecommunications — *Bachelor of Science* 2014 – 2020
Bauman Moscow State Technical University
Diploma thesis “3D printer failure detection system based on computer vision detection”

WORK EXPERIENCE

CTO & Data Scientist — *susteam* JAN 2023 – FEB 2025

- Architected and built automated ESG analytics platform from scratch, engineering multi-stage pipeline with OCR and RAG-augmented LLMs for greenwashing detection
- Developed a full-stack solution of scalable AWS microservices architecture with React frontend, increasing data processing throughput by 60%
- Delivered market-ready product automating sustainability reporting for hospitality clients, providing explainable AI-driven insights

FastAPI, AWS, React, OCR, LangChain, BERT, LLaMA3, RAG

Research Scientist — Rail4Future — *Technische Universität Wien* FEB 2024 – JUL 2024

- Optimized LSTM-based digital twin for rail infrastructure, improving prediction accuracy by 27% and reducing training time by 40% for Siemens and ÖBB
- Implemented rigorous statistical validation frameworks establishing new standards for model robustness in production
- Refactored and modularized codebase enabling faster experimentation cycles and reliable deployment

Python, TensorFlow, LSTM, Statistical Analysis, Digital Twins

Machine Learning Analyst — *GLOSAV* FEB 2021 – JUL 2021

- Developed a computer vision pipeline for obstacle detection and tracking on railway routes using YOLOv5 and OpenCV.
- Achieved sub-5ms latency on real-time streams by optimizing frame processing and inference pipelines.
- Enhanced detection stability through custom temporal smoothing and calibration algorithms.

Python, YOLOv5, OpenCV, NumPy

Software Engineer & 3D Maker — *Arterra Miniature* FEB 2020 – MAR 2021

- Created interactive 3D visualizations and prototypes, delivering end-to-end custom hardware and software solutions for clients.
- Integrated microcontrollers and designed automation for small-scale production devices and art installations.

Blender, Cura, Arduino, Python

Freelance & Linwood — *Full-Stack Developer* MAR 2017 – SEP 2019

- Designed, implemented, and deployed full-stack web applications for e-commerce and educational platforms.
- Optimized page load times and database queries, improving performance by up to 40%.
- Delivered complete front-end redesigns and backend extensions for clients using modern frameworks.

Python, Django, PHP, Yii2, React, JavaScript, HTML/SCSS, PostgreSQL

Frontend Developer — *KRK Group* SEP 2019 – DEC 2019

- Implemented user interfaces and database communication for an internal learning platform.
- Collaborated with backend developers to ensure responsive, accessible, and scalable front-end components.

React, JavaScript, REST APIs

PROJECTS

LawSynchr — *Full-stack and Machine Learning Development* Aug 2024

- Conducted in-depth research and analysis to evaluate innovative ideas, leading to the creation of a comprehensive pitch deck.
- Led the end-to-end full-stack development of the project, including the implementation of a Minimum Viable Product (MVP) with integrated machine learning components.

Flask, Svelte, RAG, LLM

Arterra — *Portfolio Website Development* Aug 2024

- Designed and developed a portfolio website, integrating CI/CD pipelines for seamless updates via GitHub Pages.
- Utilized Obsidian vault data to create an interactive front-end that visualizes my professional journey using graphology and sigma libraries.

Svelte, graphology, sigma

TradeBot — *Crypto Trading Analysis and Future Trading* Jun 2024

- Engineered a bot to systematically scrape and collect trade data from Binance, allowing detailed real-time market analysis.
- Designed and implemented a robust trading strategy, optimizing both short-term gains and long-term trends.

asyncio, FastAPI, BinanceAPI, pandas, mplfinance

DAVU Project TU Wien — *Document Analysis and Optical Character Recognition (OCR)* Jun 2024

- Conducted layout analysis of historical documents to improve text extraction accuracy.
- Integrated NER and fine-tuned LLaMA-3 for metadata extraction, enhancing accuracy in identifying dates, locations, and photographers.

Tesseract, SpaCy, LLaMA-3, Python

Cryptex — *Full-stack Development of NFT Platform* Feb 2024

- Implemented a secure authentication system using MetaMask and Polygon blockchain for managing encoded NFTs.

Svelte, Polygon, Solidity

Coding Austria — *Lip Reading App at Hackathon* Jul 2023

- Built a lips-reading app using the AV-HuBERT model for the Austrian Red Cross challenge, enabling communication in noisy environments.

AV-HuBERT, FastAPI, Next.js

AWARDS

AI Mission Hackathon 3 — “Nightwalkers” — *1st Place Winner* Oct 2025

- Won 1st place by developing a sophisticated multi-tool AI agent that autonomously answered complex sustainability questions, achieving over 70% accuracy on database and Wikipedia queries through iterative testing and prompt refinement.
- Architected a robust agentic system with five custom MCP servers for SQL databases, Wikipedia, PDF retrieval, currency conversion, and a Python-powered calculator to ensure precise arithmetic and data handling.
- Engineered a battle-tested QA system, which not only retrieves answers, but provides the sources (links, pages, database)

Claude Sonnet, Python, Model Context Protocol (MCP), SQL, FastMCP, Ragie, Wikipedia API

AIM Hackathon — TIMETOACT Group — *2nd Place Winner* Oct 2024

- Developed a Retrieval-Augmented Generation (RAG) platform to identify greenwashing in ESG reports, assigning trustworthiness scores and providing explainable insights.

LangChain, OpenAI, FAISS, Python, Flask

Tourism Technology Hackathon — *2nd Place Winner* Nov 2023

- Created an interactive knowledge graph and chatbot that analyzes tourism data and visualizes points of interest on a map.

Selenium, GeoPandas, Folium

STUDIES AND PUBLICATIONS

Publication — *IEEM24-F-0298* 2024

Comparative Analysis of Machine Learning-based Surrogate Modeling Approaches for Multi-body Dynamic Simulation in Railway Digital Twin Platform

Moscow Institute of Physics and Technology — *Deep Learning School* 2020 – 2021

Higher School of Economics University and Yandex — *School of Data Analysis* 2020 – 2020

TECHNICAL SKILLS

AI/ML:	Python, TensorFlow, PyTorch, LLMs (BERT, LLaMA, GPT), RAG, LangChain, Computer Vision (YOLO, OpenCV), scikit-learn, Pandas, NumPy
Engineering:	FastAPI, Django, React, Svelte, JavaScript/TypeScript, Docker, AWS (EC2/S3), PostgreSQL, Redis, RabbitMQ, Linux
Languages:	English (C1), Russian (C2), Armenian (B2), German (A2)